

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

- 1 1. (Original) An imaging tape cartridge picker system for use in aligning a
2 tape cartridge picker with cartridges in cells of a tape cartridge magazine, comprising:
3 a picker assembly;
4 illumination sources disposed at the front of the picker assembly for illuminating an
5 object;
6 an imager disposed on the front of the picker assembly for gathering image data of
7 the object; and
8 a processor, coupled to the imager and illumination sources, for thresholding the
9 image data obtained from the imager and for controlling the illumination sources;
10 wherein the processor uses bounding boxes to identify the location of a desired
11 physical feature in the thresholded image.

- 1 2. (Original) The imaging tape cartridge picker system of claim 1 wherein
2 the processor identifies the location of the desired physical feature using the bounding boxes
3 by finding a vertical feature of the desired physical feature by finding a valid vertical
4 bounding box, determining whether a valid vertical feature is found, using the valid vertical
5 feature as a reference point for the search for the horizontal feature and finding a valid
6 horizontal bounding box of the desired physical feature when a vertical feature is positively
7 identified, determining whether a valid horizontal feature is found and identifying a top-left
8 intersection of the vertical and horizontal bounding boxes with the bottom-right corner of the
9 desired physical feature when a valid horizontal feature is found.

1 3. (Original) The imaging tape cartridge picker system of claim 2 wherein
2 the desired physical feature comprises a top left intersection in a bottom-right corner of a
3 vertical and horizontal member of a cartridge cell within a tape library system.

1 4. (Original) The imaging tape cartridge picker system of claim 3 wherein
2 the position of the intersection relative to the imager is used to calibrate the physical position
3 of the picker assembly.

1 5. (Original) The imaging tape cartridge picker system of claim 1 wherein
2 the desired physical feature comprises a top left intersection of a vertical and horizontal
3 member of a cartridge cell within a tape library system.

1 6. (Original) The imaging tape cartridge picker system of claim 5 wherein
2 the position of the intersection relative to the imager is used to calibrate the physical position
3 of the picker assembly.

1 7. (Currently Amended) A method for use in aligning a tape cartridge picker
2 with cartridges in cells of a tape cartridge magazine, comprising:

3 illuminating an object with an illumination source;

4 gathering image data for the illuminated object; and

5 processing the image data by using bounding boxes to identify the location of a
6 desired physical feature in the thresholded image;

7 wherein the desired physical feature comprises a top left intersection of a vertical and
8 horizontal member of a cartridge cell within a tape library system.

1 8. (Original) The method of claim 7 wherein the processing the image data
2 by using bounding boxes further comprises:
3 finding a vertical feature of the desired physical feature by finding a valid vertical
4 bounding box;
5 determining whether a valid vertical feature is found;
6 using the valid vertical feature as a reference point for the search for the horizontal
7 feature and finding a valid horizontal bounding box of the desired physical feature when a
8 vertical feature is positively identified;
9 determining whether a valid horizontal feature is found; and
10 identifying a top-left intersection of the vertical and horizontal bounding boxes with
11 the bottom-right corner of the desired physical feature when a valid horizontal feature is
12 found.

1 9. (Original) The method of claim 8 wherein the desired physical feature
2 comprises a top left intersection of a vertical and horizontal member of a cartridge cell within
3 a tape library system.

1 10. (Original) The method of claim 9 further comprising using the position of
2 the intersection relative to the imager to calibrate the physical position of the picker
3 assembly.

1 11. (Canceled)

1 12. (Currently Amended) The method of claim [[11]] 7 further comprising using
2 the position of the intersection relative to the imager to calibrate the physical position of the
3 picker assembly.

1 13. (Original) An article of manufacture comprising a program storage
2 medium readable by a computer, the medium tangibly embodying one or more programs of
3 instructions executable by the computer to perform a method for use in aligning a tape
4 cartridge picker with cartridges in cells of a tape cartridge magazine, the method comprising:
5 illuminating an object with an illumination source;
6 gathering image data for the illuminated object; and
7 processing the image data by using bounding boxes to identify the location of a
8 desired physical feature in the thresholded image;
9 wherein the desired physical feature comprises a top left intersection of a vertical and
10 horizontal member of a cartridge cell within a tape library system.

1 14. (Original) The article of manufacture of claim 13 wherein the processing
2 the image data by using bounding boxes further comprises:
3 finding a vertical feature of the desired physical feature by finding a valid vertical
4 bounding box;
5 determining whether a valid vertical feature is found;
6 using the valid vertical feature as a reference point for the search for the horizontal
7 feature and finding a valid horizontal bounding box of the desired physical feature when a
8 vertical feature is positively identified;
9 determining whether a valid horizontal feature is found; and
10 identifying a top-left intersection of the vertical and horizontal bounding boxes with
11 the bottom-right corner of the desired physical feature when a valid horizontal feature is
12 found.

1 15. (Original) The article of manufacture of claim 14 wherein the desired
2 physical feature comprises a top left intersection of a vertical and horizontal member of a
3 cartridge cell within a tape library system.

1 16. (Original) The article of manufacture of claim 15 further comprising
2 using the position of the intersection relative to the imager to calibrate the physical position
3 of the picker assembly.

1 17. (Canceled)

1 18. (Currently Amended) The article of manufacture of claim [[17]] 13 further
2 comprising using the position of the intersection relative to the imager to calibrate the
3 physical position of the picker assembly.

1 19. (Original) An imaging tape cartridge picker system for use in aligning a
2 tape cartridge picker with cartridges in cells of a tape cartridge magazine, comprising:
3 a picker assembly;
4 illuminating means disposed at the front of the picker assembly for illuminating an
5 object;
6 imaging means disposed on the front of the picker assembly for gathering image data
7 of the object; and
8 processing means, coupled to the imaging means and illuminating means, for
9 thresholding the image data obtained from the imaging means and for controlling the
10 illuminating means;
11 wherein the processing uses bounding boxes to identify the location of a desired
12 physical feature in the thresholded image.

1 20. (Original) The imaging tape cartridge picker system of claim 19 wherein
2 the processing means identifies the location of the desired physical feature using the
3 bounding boxes by finding a vertical feature of the desired physical feature by finding a valid
4 vertical bounding box, determining whether a valid vertical feature is found, using the valid
5 vertical feature as a reference point for the search for the horizontal feature and finding a
6 valid horizontal bounding box of the desired physical feature when a vertical feature is
7 positively identified, determining whether a valid horizontal feature is found and identifying
8 a top-left intersection of the vertical and horizontal bounding boxes with the bottom-right
9 corner of the desired physical feature when a valid horizontal feature is found.

1 21. (Original) The imaging tape cartridge picker system of claim 20 wherein
2 the desired physical feature comprises a top left intersection of a vertical and horizontal
3 member of a cartridge cell within a tape library system.

1 22. (Original) The imaging tape cartridge picker system of claim 21 wherein
2 the position of the intersection relative to the imager is used to calibrate the physical position
3 of the picker assembly.

1 23. (Original) The imaging tape cartridge picker system of claim 19 wherein
2 the desired physical feature comprises a top left intersection of a vertical and horizontal
3 member of a cartridge cell within a tape library system.

- 1 24. (Original) The imaging tape cartridge picker system of claim 23 wherein
- 2 the position of the intersection relative to the imager is used to calibrate the physical position
- 3 of the picker assembly.